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(54) **System for constructing air conditioning cabinets and method for constructing same.**

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Description

The present invention relates to a method and a system of constructing air conditioning cabinets according to the preamble of claims 1 and 4, resp.

In a known method, as known from WO 81/00443, integral wall panels are received in rib profiles of a frame. The wall panels are assembled in integral form beforehand and therefore one or more rib profiles of the frame will have to be fixed after the wall panels are fitted. Often therefore a worker will have to crawl into an almost finished cabinet or the cabinet will have to be tilted.

It is an object of the present invention to improve upon the above prior art and to provide an easy method for building up air conditioning cabinets.

Such object is achieved by means of a method and a system characterized according to claims 1 and 4, resp.

According to the method of the present invention a relatively stable, completed frame can be erected and the air conditioning apparatus can be fixed to that frame, whereafter the wall panels can easily be fitted.

Dependent sub-claims relate to preferred embodiments, in which all attaching is as much as possible implemented by means of clamps. This is advantageous e.g. if modern anti-rust treatments for metal such as zinc plating and cathodolysis treatments are used, as it is so no longer necessary to drill or screw into a panel and/or rib profile of an air conditioning cabinet, such as to prevent locally removing protective layers and therefore preventing corrosion.

Preferrably air conditioning cabinets can be made cold-bridge free, by locating strips of insulating material between all inner and outer panels (claim 16) and/or also at rib profiles.

In the prior art such insulating material was usually included by means of sealing compound, which is more labour intensive and therefore more expensive.

In addition, with a preferred embodiment of the construction system according to the invention an air conditioning cabinet can be constructed that is cold bridge free, also in the frame, by locating strips of insulating material between all inner and outer panels (claim 16), which is also possible in a simple manner with the wall panels to be attached to the rib profiles.

Sealing the gaps between the wall panels and the rib profiles with sealing compound is therefore no longer necessary.

According to the method for constructing an air conditioning cabinet, an air conditioning apparatus is placed in a frame built up from the ground and the wall panels are subsequently arranged against

the frame from outside without it being necessary to tilt the constructed frame in the meantime.

Further advantages, features and details of the current invention will become apparent with reference to a drawing, in which:

fig. 1 shows an air conditioning cabinet which is constructed using a preferred embodiment of the system according to the invention for constructing same,

fig. 2 is a section along the line II-II from fig. 1,

fig. 3 is an alternative embodiment of fig. 2,

fig. 4A-4H show outer and inner panels for the construction system according to the invention,

fig. 5 shows detail V from fig. 1,

fig. 6 shows detail VI from fig. 1,

fig. 7 shows detail VII from fig. 2 in perspective,

fig. 8A-8L show a preferred embodiment of the method for constructing an air conditioning cabinet making use of a preferred embodiment of the construction system according to the invention,

fig. 9 is a section along the line IX-IX from fig. 8L,

fig. 10 is a section along the line X-X from fig. 8L, and

fig. 11 is the section from fig. 3 in more detail.

An air conditioning cabinet 1 in double walled form (fig. 1) which is constructed using a preferred embodiment of the method and the construction system according to the invention consists of a sub-frame 2, a frame 3 built up of rib profiles and having attached to it wall panels 4 which comprise outer panels 5. Air conditioning cabinet 1 is provided with an air inlet 6 and an air outlet 7 and contains for example a filter unit 8, a ventilator 9 and a cooling unit 10, but can also contain other air conditioning apparatus.

The outer panels 5, 30, 11 (fig. 2) of the substantially horizontally arranged air conditioning cabinet are provided with edges 12, 13, 14 and 15 that are profiled and grip into one another such that these adjoining outer panels 5, 30, 11 can be arranged from outside the frame 3 and that the edges 12, 13 and 14, 15 gripping into one another thereby form projections 16 and 17 respectively which can be attached to an inner panel 18, 19 and 20 that is present if required. In the air conditioning cabinet in double walled form from fig. 2 the inner panels 18, 19 and 20 are indeed present. The edges 12, 13, 14 and 15 are located on the sides of the outer panels 5, 30, 11, whereby the edge on the one side 13, 15 has a substantially swan-neck form and on the other side 12, 14 is substantially Z-shaped. The outer initial panel 30 and the outer end panel 11 have in addition edges, 21 and 22 respectively, profiled such that they can be arranged from outside the frame 3 between rib profiles 23, 24 respectively and the adjoining outer panel 5, whereby

the inner panels 18, 20 and the respective outer panel 11, 30 can be attached to the rib profiles 24 and 23 respectively using the same fastening means in the form of clamps 25. For this purpose the outer end panel 11 has a shortened edge end 26 of the swan-neck shaped edge 22 and the outer initial panel 30 has two swan-neck shaped edges 15, 21, whereby the edge end 27 of the swan-neck shaped edge 21 is likewise shortened.

By now sliding along each outer panel, whether or not provided with an associated inner panel, in sequence in the direction of the arrow A into the frame 3 built up of rib profiles 23, 24, the clamps 25 can in each case be arranged from outside the frame to be constructed in order to attach the outer and inner panels to each other and to the edge profiles.

In another embodiment (not shown), the inner panels are placed first, following which the outer panels are placed in the opposite direction.

The air conditioning cabinet 1 can in a simple manner be given a cold bridge free form, in the connections to the frame as well as in the mutual connections, using strips of insulation material 28 to be arranged between the edges.

Through the use of clamps 25 results an air conditioning cabinet which has a flat and evenly finished surface on the outside as well as the inside, which is of importance not only from an aesthetic viewpoint but also from the point of view of maintenance and cleaning, particularly in areas to be kept dust-free.

With the preferred embodiment of the construction system according to the invention air conditioning cabinets can of course be constructed in a simple manner in different lengths, by varying the number of outer intermediate panels 5. The height of the air conditioning cabinets to be constructed can be varied using the height of the panels. If required, it is conceivable to give air conditioning cabinets a vertical form, whereby the edges gripping each other will be located at the top and bottom of the panels.

In the remaining figures the same parts of the construction system will be referred to with the same reference numerals and, where not strictly necessary, these will not be discussed further for the sake of brevity.

Figure 3 shows an alternative for the side wall of figure 2 of the air conditioning cabinet 1, whereby an outer access panel 31 and two associated inner access panels 32 are included. The inner initial panels 20 and the outer initial panels 30 are fitted from both rib profiles 23 and 24 respectively in a direction towards the centre, after which the inner and outer access panels 31, 32 are fitted between panels 20, 30. The outer access panel 31 is provided with an opening 34 closable with a cap

33, through which a screw bolt 35 can be reached, so that the inner access panels, each provided with two U-shaped side edges 36 and 37 and each being approximately half the length of the outer access panel 31 and which can be attached to each other using screw bolts 38 and a plate 39, become accessible, in order that the interior of air conditioning cabinet 1 can be reached in a simple manner.

The access panels of this paragraph only constitute a further possibility of the system according to claim 4 and are as such not covered thereby.

The Z-shaped edges of the outer panels 5, 11 and 31 (fig. 4A-4C) are provided with ends 40, 41, and 42 that are bent over for accurate gripping in the swan-neck shaped edge 13 of panel 5. In addition, the outer panels 5, 11, 31 and 30 (fig. 4A-4C) are provided with substantially swan-neck shaped upper and lower edges 43 and 44 for attachment to horizontal rib profiles.

Vertical rib profiles 23, 24 as well as horizontal rib profiles are formed by corner profiles with two U-shaped edges.

In another embodiment of the construction system (not shown), the vertical rib profiles 23, 24 are provided with a double folded edge which serves to lock clamps. Insulating elements can be accommodated between the rib profiles and the clamps.

The inner panels 19, 18, 32 and 20 (fig. 4E-4G) have Z-shaped upper and lower edges 45 and 46 for attachment to the horizontal rib profiles. The inner panel 19 is provided with a U-shaped side edge 47 as well as a Z-shaped edge 48. The inner end panel 18 is likewise provided on its side with a U-shaped edge 49 and a Z-shaped edge 50, but the length of this inner panel 18 is a piece a that corresponds with the length of a projection 16, 17, smaller than the inner panel 19. The inner initial panel 20 is provided with two Z-shaped edges 51 and 52. The inner access panel 32 is provided with two U-shaped edges 53, 54.

At the corners of the frame 3 (fig. 5, 6) the air conditioning cabinet 1 is provided with upper corner elements 55 and lower corner elements 56, which are preferably manufactured from plastic and which are each provided with stops 57 and 58 respectively for gripping respective rib profiles.

The clamps 25 (fig. 7) are preferably provided with a hook member 59 that is formed by part of the clamp 25 pressed along a centre line 60. The edges of the outer panels 5, 11 and 30 are preferably provided with recesses (not shown) for accommodating hook member 59, so that the clamp 25 is locked against shifting.

With respect to standardization of the air conditioning apparatus to be placed in the air conditioning cabinet, the width dimension of the inner and outer panels will usually be a multiple of a

standard dimension, for example 32 cm. or a foot, while in height more variations of the dimensions of the inner and outer panels will be normal.

A preferred embodiment of a method for constructing an air conditioning cabinet will now be described (fig. 8A-8L). A sub-frame 62 is first placed on the ground 61 (fig. 8A). Using screw bolts 63 a framework 64 is then attached to sub-frame 62, whereby preferably a strip of insulation material 65 is accommodated between screw bolts 63 and framework 64 (fig. 8B-8C). Fig. 9 also shows that the screw bolts 63 can also rest on the bottom profile 76 with a large ring, and can thus connect that bottom profile with the sub-frame, for example the screw bolts 63 can rest alternately on framework 64 and the bottom profile 76. Onto framework 64 is then laid a close-fitting base plate 66 (fig. 8D). Onto the edge of base plate 66 is subsequently laid a strip of insulation material 67, after which a layer of insulation material 68 is adhered to the whole base plate 66 and onto this layer is placed a bottom panel 69 (fig. 8E-8F). Bottom panel 69 is provided with shortened swan-neck shaped edges 70 around which can be fixed clamps 25 for the attachment of bottom panel 69 to the framework 64 (fig. 8G). Onto the bottom panel 69 and the framework 64 can now be placed, in the manner described above, a frame 3 which consists of vertical rib profiles 23, 24, 71 and 72, horizontal rib profiles 75 and bottom profiles 76. Located in the corners are the plastic bottom corner and top corner elements 55 and 56 already referred to. The rib profiles 23, 24, 71, 72 and 75 are formed by a corner profile having two U-shaped edges, while the bottom profile 76 consists of two corner profiles, one on top of the other, having a Z-shaped edge. The bottom profile can be provided with openings for accommodating screw bolts 63 (fig. 8L) and it can also accommodate an insulating element.

In an air conditioning cabinet that is to take a double walled form inner panels 78 can now be attached to the constructed frame 3, whereby strips of insulation material 77 are arranged against their edges, following which outer panels 79 provided with swan-neck shaped edges can be attached to frame 3 using clamps 25. Accommodated between inner panels 78 and outer panels 79 is a layer of insulation material 80. Finally, over the edges of the thus constructed air conditioning cabinet 1 cover profiles 81 consisting of corner profiles having two edges Z-shaped in section are snapped into place into the free parts of the swan-neck shaped edges of the outer panels (fig. 8L, fig. 10). Accommodated between the cover profile 81 and the outer panels 79 are strips of insulation material 82, while located against the rib profiles is an insulating corner element 83. The horizontal cover profiles 84

are attached to the bottom profile 76 using a self-tapping screw 85 which can be reached via an opening 87 closable with a cap 86 (fig. 8L, fig. 9). Accommodated between the inner and outer panels are layers of insulation material 68, 80 and 90, 91 respectively (fig. 9 and fig. 10 respectively).

As will be apparent, fig. 8A-8L show a preferred embodiment of the method and the construction system for an air conditioning cabinet provided with only one wall panel without intermediate panels, while it is precisely one of the advantages of the current invention that an air conditioning cabinet of a determined size can be constructed as required using a number of intermediate panels, depending on the air conditioning apparatus to be placed in it. This air conditioning apparatus is usually accommodated in frames of standard size, so that these frames can easily be placed in the frame of the air conditioning cabinet to be constructed that is also usually provided with standard measurements.

Finally, fig. 11 further shows how access can be gained in a simple manner to the apparatus located behind the panels for the purpose of inspection. By removing the cap 32 the screw 35 can be reached, which is then unscrewed, following which the outer access panel 31 can be removed. After unscrewing screws 38 and removing the plate 39 and the clamp 25, inner access panels 32 can also be removed.

The embodiment of fig. 11 also constitutes an illustration and further possibility of the present invention, as such not covered by independent claims 1 and 4.

It is noted that it is possible with the construction system and the method according to the invention to build up air conditioning cabinets in single walled form, whereby, however, the clamps 25 then have to be replaced by other clamps having a smaller holding jaw or by screw connections.

It is to be understood that depending on requirements relating to moisture and temperature of the air to be conditioned as well as the air outside a cabinet, there will be chosen either a double or single walled air cabinet - the single walled of course being less expensive -, whether or not provided with a cold bridge free frame. As well inside as outside the cabinet the walls will have to remain dry to lengthen the lifetime of the cabinet. In case the conditioned air has to be dust free there will be chosen a double walled cabinet.

All the elements of the construction system can be manufactured with aid of a limited number of single mechanical devices.

Claims

1. A method of constructing one or more air conditioning cabinets in which air conditioning apparatus is to be accommodated, comprising the following steps:
 - building up a frame from the ground; 5
 - coupling an inner panel of a wall panel with the frame and a former inner panel;
 - fitting opposite said inner panel an outer panel having a profiled edge with a groove, and on the opposite side another profiled edge which cooperate with such a groove; 10
 - fitting a consecutive inner panel to said former inner panel; 15
 - fixing said consecutive inner panel to said former inner and outer panel by common attachment means, e.g. one or more clamps or screws; and
 - sliding a consecutive outer panel into the profiled edge of the former outer panel. 20
 2. A method as claimed in claim 1, wherein lengthwise of the built up frame an outer panel is attached to a vertical rib profile, that then an outer intermediate panel is slid into each adjoining preceding outer panel and that finally an outer end panel is slid into an outer intermediate panel and is attached to the vertical rib profile located opposite. 25
 3. A method as claimed in claim 1 or 2, wherein an outer initial panel and an inner initial panel having a strip of insulation material between their edge ends are attached to a vertical rib profile using a clamp, that then an outer and an inner intermediate panel are attached to the preceding wall panel, in each case using a clamp, and that an outer end panel and an inner end panel are attached to a vertical rib profile located opposite using a clamp. 30
 4. A system of constructing an air conditioning cabinet (1), in which air conditioning apparatus is to be accommodated, comprising: 35
 - a frame (3) to be built up from the ground; and
 - wall panels (4) to be coupled with one another and the frame and to be attached thereto, characterized in that the wall panels include: 40
 - outer panels (5, 11, 30, 31) to be fitted to the frame and to one another and to be attached thereto;
 - inner panels to be attached to one another and to an outer panel, by common attachment means, e.g. one or more clamps or screw, whereby the panels are 45
- such that a profiled edge of an outer panel forms a projection to which profiled edges of two consecutive inner panels are attached and wherein the profiled edge of the outer panel forms a groove for sliding therein a consecutive outer panel provided with an opposite profiled edge, which cooperate with such a groove.
5. construction system as claimed in claim 4, characterized by intermediate outer panels (5) which are provided on their one side with edges (3) substantially swan-neck shaped in section and on their other opposite side with edges (14) substantially Z-shaped in section.
 6. Construction system as claimed in claim 4 or 5, characterized by at least one outer initial panel (30) and at least one outer end panel (11), which are provided with edges profiled such that they can be arranged from outside the frame between a rib profile (23, 24) and an adjoining outer panel, whereby an inner panel (18, 20) and the respective outer panel (11, 30) can be fastened to said rib profile using common attachment means (25).
 7. Construction system as claimed in claim 5 or 6, characterized by an outer end panel (11) provided with a shortened edge end for attachment to a rib profile (23).
 8. construction system as claimed in any of the claims 5-7, characterized by an outer initial panel (30) provided with two swan-neck shaped edges (15, 21), of which one edge (21) is provided with a shortened edge end for attachment to a rib profile (24).
 9. Construction system as claimed in any of the foregoing claims, characterized by an outer access panel (31) provided with an opening (34) for access to means (35) for attachment thereof to an adjoining outer panel (30).
 10. Construction system as claimed in any of the foregoing claims, characterized by an inner intermediate panel (19) provided with a Z-shaped edge (48) and a U-shaped edge (47).
 11. Construction system as claimed in any of the claims 2-7, characterized by an inner initial panel (20) provided with two Z-shaped edges (51, 52).
 12. Construction system as claimed in any of the claims 2-8, characterized by an inner end pan-

- el (18) which is provided with one Z-shaped and one U-shaped edge (50 and 49 respectively) and which has a slightly smaller length than an inner intermediate panel.
13. Construction system as claimed in any of the foregoing claims, characterized by two inner access panels (32) which are each provided with two U-shaped edges (53, 54) and the length of which amounts to approximately half that of an inner intermediate panel.
14. Construction system as claimed in any of the claims 2-9, characterized in that the or each rib profile (23, 24, 71, 72, 75) is formed by a corner profile having two U-shaped edges.
15. Construction system as claimed in any of the foregoing claims, characterized by clamps (25), which are preferably provided with a hook member (59), for fitting round the edges of the outer panels, inner panels and rib profiles.
16. Construction system as claimed in claim 15, characterized in that the edges are provided with a recess for accommodating the clamp.
17. Construction system as claimed in any of the foregoing claims, characterized by strips of insulation material (28) for arranging between the edge ends of the inner panels and the edge ends of the outer panels.
18. Construction system for a substantially horizontal air conditioning cabinet (1) as claimed in any of the foregoing claims, characterized in that the outer panels are provided with upper and lower edges (43 and 44 respectively) substantially swan-neck shaped in section for attachment to the horizontal rib profiles (75).
19. Construction system for a substantially horizontal air conditioning cabinet as claimed in any of the foregoing claims, characterized in that the inner panels are provided with upper and lower edges (45 and 46 respectively) substantially Z-shaped in section for attachment to horizontal rib profiles (75).
20. An airconditioning cabinet constructed according to any of methods as claimed in claims 1-3, or by means of the construction system as claimed in any of the claims 4-17.
- Revendications**
1. Méthode pour la construction d'un ou plusieurs caissons de conditionnement d'air dans lesquels un appareil de conditionnement d'air doit être logé, comportant les étapes suivantes :
- construction d'un cadre à partir du sol ; caractérisée par les étapes suivantes :
 - couplage d'un panneau intérieur d'un panneau de paroi avec le cadre et un panneau intérieur précédent ;
 - adaptation face audit panneau intérieur d'un panneau extérieur ayant un bord profilé avec une rainure et du côté opposé un autre bord profilé qui coopère avec cette rainure ;
 - adaptation d'un panneau intérieur suivant audit panneau intérieur précédent ;
 - fixation dudit panneau intérieur suivant auxdits panneau intérieur et panneau extérieur précédents par des moyens de fixation courants, par exemple une ou plusieurs pinces ou vis ; et
 - glissement d'un panneau extérieur suivant dans le bord profilé du panneau extérieur précédent.
2. Méthode selon la revendication 1, caractérisée en ce que dans le sens longitudinal du cadre construit un panneau extérieur est fixé à un profilé nervuré vertical. qu'ensuite un panneau intermédiaire extérieur est glissé dans chaque panneau extérieur précédent contigu et qu'enfin un panneau d'extrémité extérieur est glissé dans un panneau intermédiaire extérieur et est fixé au profilé nervuré vertical situé en face.
3. Méthode selon la revendication 1 ou 2, caractérisée en ce qu'un panneau initial extérieur et un panneau initial intérieur ayant une bande de matériau isolant entre leurs extrémités de bord sont fixés à un profilé nervuré vertical en utilisant une pince, qu'ensuite un panneau intermédiaire extérieur et un intérieur sont fixés au panneau de paroi précédent, en utilisant dans chaque cas une pince, et qu'un panneau d'extrémité extérieur et un panneau d'extrémité intérieur sont fixés à un profilé nervuré vertical situé en face en utilisant une pince.
4. Système pour la construction d'un caisson de conditionnement d'air (1), dans lequel un appareil de conditionnement d'air doit être logé, comportant :
- un cadre (3) devant être construit à partir du sol ; et
 - des panneaux de paroi (4) devant être couplés les uns aux autres et au cadre et devant y être fixés, caractérisé en ce que les panneaux de paroi comprennent :
 - des panneaux extérieurs (5,11,30,31) devant être adaptés au cadre et les uns aux

- autres et devant y être fixés ;
- des panneaux intérieurs devant être fixés les uns aux autres et à un panneau extérieur, par des moyens de fixation courants, par exemple une ou plusieurs pinces ou vis, les panneaux étant tels qu'un bord profilé d'un panneau extérieur forme une saillie à laquelle des bords profilés de deux panneaux intérieurs consécutifs sont fixés et où le bord profilé du panneau extérieur forme une rainure pour y glisser un panneau extérieur suivant pourvu d'un bord profilé opposé, qui coopère avec cette rainure.
5. Système de construction selon la revendication 4, caractérisé en ce qu'il comporte des panneaux extérieurs intermédiaires (5) qui sont pourvus sur un de leurs côtés de bords (3) de section essentiellement en col de cygne et sur leur autre bord opposé de bords (14) de section essentiellement en Z.
 6. Système de construction selon la revendication 4 ou 5, caractérisé en ce qu'il comporte au moins un panneau initial extérieur (30) et au moins un panneau d'extrémité extérieur (11), qui sont pourvus de bords profilés de telle sorte qu'ils puissent être disposés de l'extérieur du cadre entre un profilé nervuré (23,24) et un panneau extérieur contigu, un panneau intérieur (18,20) et le panneau extérieur correspondant (11,30) pouvant être fixés audit profilé nervuré en utilisant des moyens de fixation courants (25).
 7. Système de construction selon la revendication 5 ou 6, caractérisé en ce qu'il comporte un panneau d'extrémité extérieur (11) pourvu d'une extrémité de bord raccourcie pour la fixation à un profilé nervuré (23).
 8. Système de construction selon l'une quelconque des revendications 5 à 7, caractérisé en ce qu'il comporte un panneau initial extérieur (30) pourvu de deux bords en forme de col de cygne (15,21), dont un bord (21) est pourvu d'un bord raccourci pour la fixation à un profilé nervuré (24).
 9. Système de construction selon l'une quelconque des revendications précédentes, caractérisé en ce qu'il comporte un panneau d'accès extérieur (31) pourvu d'une ouverture (34) pour accéder à des moyens (35) pour le fixer à un panneau extérieur contigu (30).
 10. Système de construction selon l'une quelconque des revendications précédentes, caractérisé en ce qu'il comporte un panneau intermédiaire intérieur (19) pourvu d'un bord en Z (48) et d'un bord en U (47).
 11. Système de construction selon l'une quelconque des revendications 2 à 7, caractérisé en ce qu'il comporte un panneau initial intérieur (20) pourvu de deux bords en Z (51,52).
 12. Système de construction selon l'une quelconque des revendications 2 à 8, caractérisé en ce qu'il comporte un panneau d'extrémité intérieur (18) qui est pourvu d'un bord en Z et d'un en U (50 et 49 respectivement) et qui a une longueur légèrement plus petite qu'un panneau intermédiaire intérieur.
 13. Système de construction selon l'une quelconque des revendications précédentes, caractérisé en ce qu'il comporte deux panneaux d'accès intérieurs (32) qui sont chacun pourvus de deux bords en U (53,54) et dont la longueur est environ de la moitié de celle d'un panneau intermédiaire intérieur.
 14. Système de construction selon l'une quelconque des revendications 2 à 9, caractérisé en ce que le ou chaque profilé nervuré (23,24,71,72,75) est formé par une cornière ayant deux bords en U.
 15. Système de construction selon l'une quelconque des revendications précédentes, caractérisé en ce qu'il comporte des pinces (25) qui sont de préférence munies d'un élément formant crochet (59), pour s'adapter autour des bords des panneaux extérieurs, panneaux intérieurs et profilés nervurés.
 16. Système de construction selon la revendication 15, caractérisé en ce que les bords sont pourvus d'un évidement pour loger la pince.
 17. Système de construction selon l'une quelconque des revendications précédentes, caractérisé en ce qu'il comporte des bandes de matériau isolant (28) à disposer entre les extrémités des bords des panneaux intérieurs et les extrémités des bords des panneaux extérieurs.
 18. Système de construction pour un caisson de conditionnement d'air (1) essentiellement horizontal selon l'une quelconque des revendications précédentes, caractérisé en ce que les panneaux extérieurs sont pourvus de bords supérieurs et inférieurs (43 et 44 respectivement) de section essentiellement en col de

cygne pour la fixation aux profilés nervurés horizontaux (75).

19. Système de construction pour un caisson de conditionnement d'air essentiellement horizontal selon l'une quelconque des revendications précédentes, caractérisé en ce que les panneaux intérieurs sont pourvus de bords supérieurs et inférieurs (45 et 46 respectivement) de section essentiellement en Z pour la fixation à des profilés nervurés horizontaux (75).

20. Caisson de conditionnement d'air construit selon l'une quelconque des méthodes des revendications 1 à 3, ou au moyen du système de construction selon l'une quelconque des revendications 4 à 17.

Patentansprüche

1. Verfahren zur Herstellung eines oder mehrerer Klimaanlagen-Gehäuse, in denen Klimaanlagen-Geräte unterzubringen sind, mit den folgenden Schritten:

- Aufbauen eines Rahmens von dem Boden aus, gekennzeichnet durch die folgenden Schritte:
- Kuppeln einer inneren Platte einer Wandplatte mit dem Rahmen und einer vorhergehenden inneren Platte,
- Einpassen, gegenüberliegend zu der inneren Platte, einer äußeren Platte, die eine profilierte Kante mit einer Nut und auf der gegenüberliegenden Seite eine weitere profilierte Kante aufweist, die mit einer derartigen Nut zusammenwirkt,
- Einpassen einer nachfolgenden inneren Platte an die genannte vorhergehende innere Platte,
- Befestigen der nachfolgenden inneren Platte an den vorhergehenden inneren und äußeren Platten durch gemeinsame Befestigungsmittel, beispielsweise eine oder mehrere Klammern oder Schrauben, und
- Einschieben einer nachfolgenden äußeren Platte in die profilierte Kante der vorhergehenden äußeren Platte.

2. Verfahren nach Anspruch 1, bei dem längs-seits des aufgebauten Rahmens eine äußere Platte an einem vertikalen Rippenprofil befestigt wird, daß dann eine äußere Zwischenplatte in jede angrenzende vorhergehende äußere Platte eingeschoben wird, und daß schließlich eine äußere Endplatte in eine äußere Zwischenplatte eingeschoben und an dem vertikalen Rippenprofil befestigt wird, das auf der

gegenüberliegenden Seite angeordnet ist.

3. Verfahren nach Anspruch 1 oder 2, bei dem eine äußere Anfangsplatte und eine innere Anfangsplatte, zwischen deren Kantenden ein Streifen aus Isoliermaterial angeordnet ist, an einem vertikalen Rippenprofil unter Verwendung einer Klammer befestigt werden, worauf eine äußere und eine innere Zwischenplatte an der vorhergehenden Wandplatte befestigt werden, wobei in jedem Fall eine Klammer verwendet wird, und bei dem eine äußere Endplatte und eine innere Endplatte an einem gegenüberliegend angeordneten vertikalen Rippenprofil unter Verwendung einer Klammer befestigt werden.

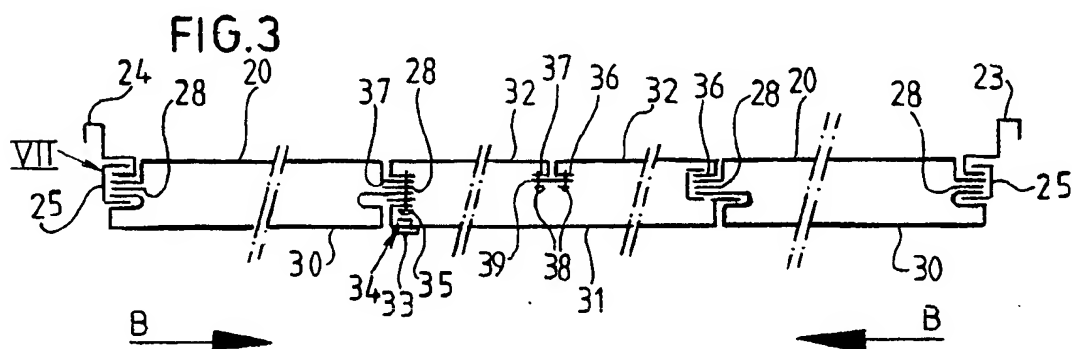
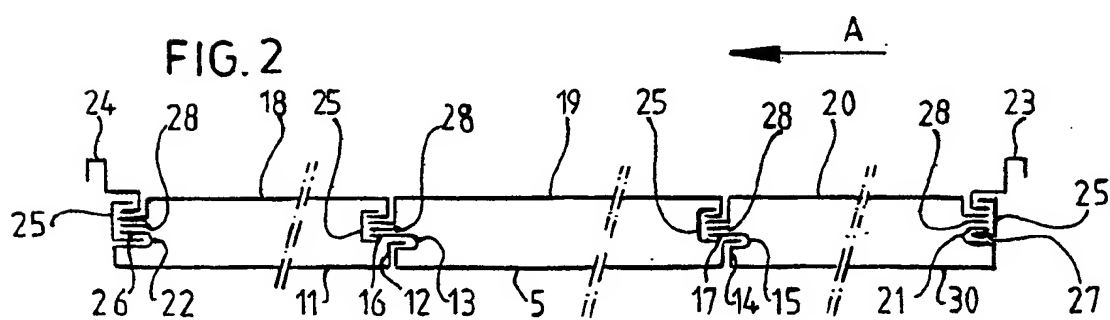
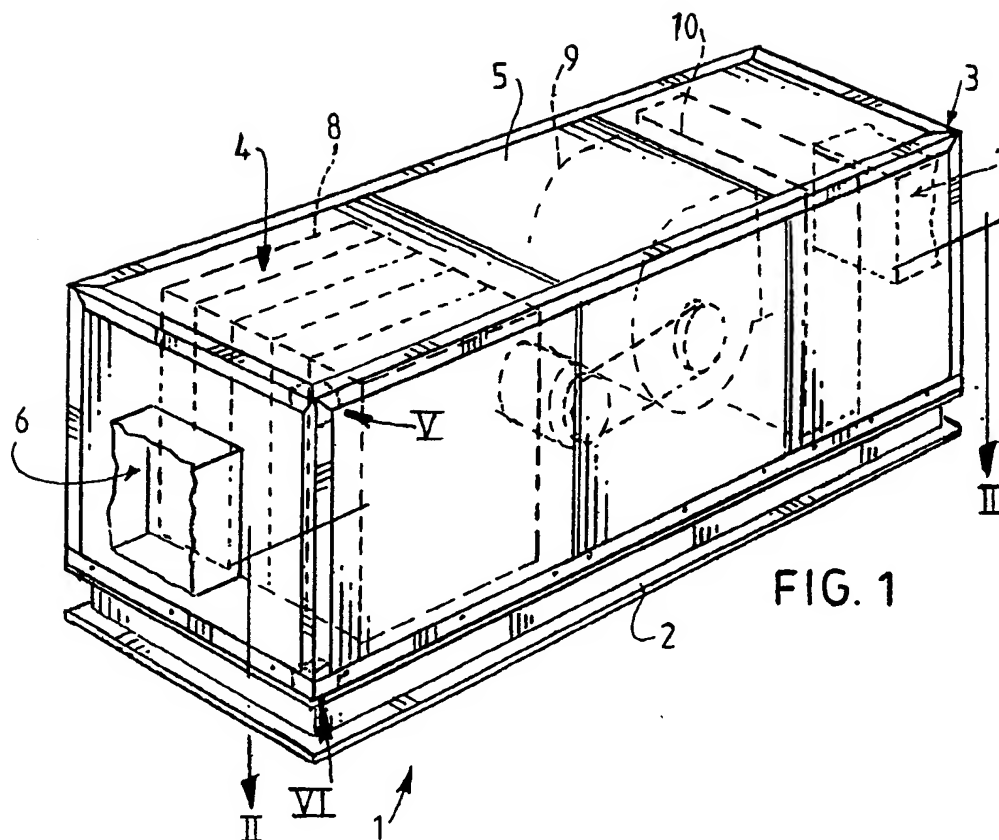
4. System zur Herstellung eines Klimaanlagen-Gehäuses (11), in dem ein Klimaanlagengeräte unterzubringen sind, mit:

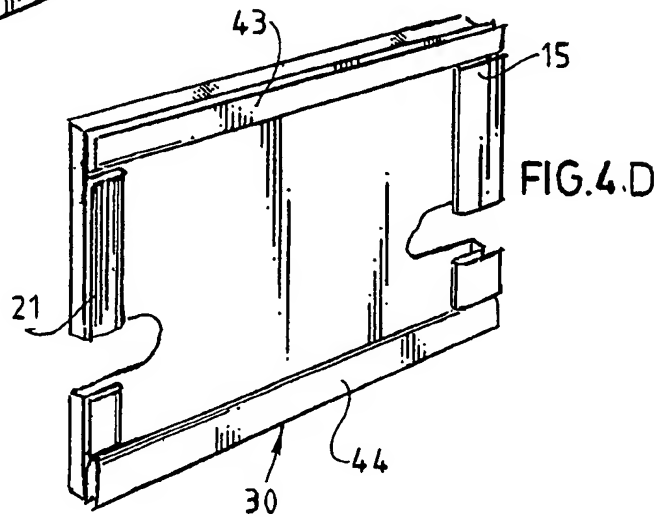
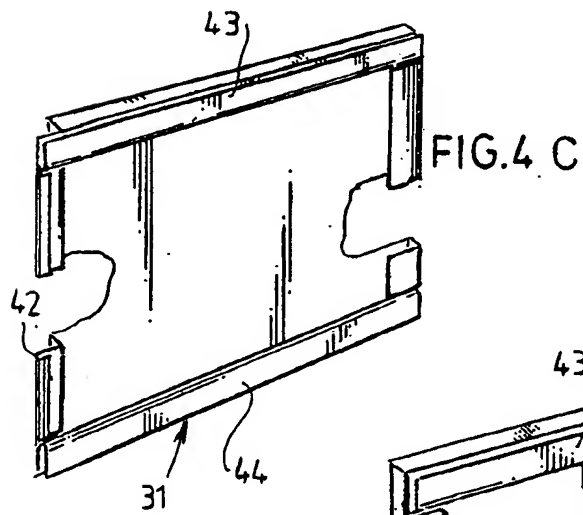
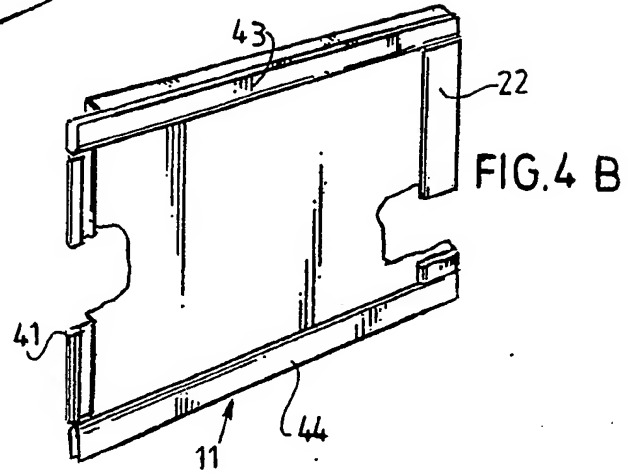
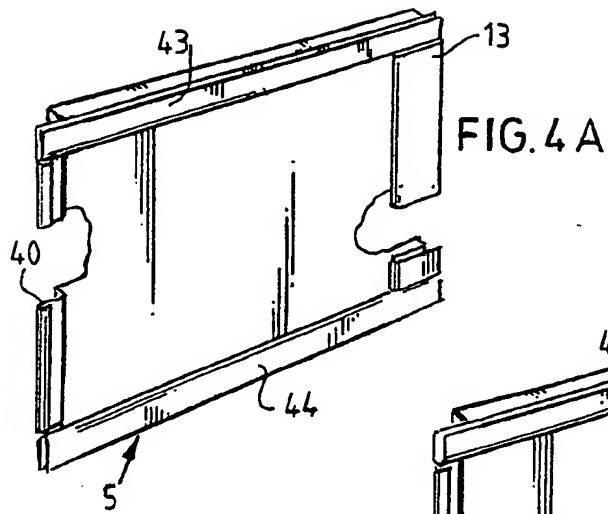
- einem Rahmen (3), der von dem Boden aus aufzubauen ist, und
- Wandplatten (4), die miteinander und mit dem Rahmen verbindbar und an diesem befestigbar sind, dadurch gekennzeichnet, daß die Wandplatten folgendes einschließen:
- äußere Platten (5,11,30,31), die an dem Rahmen und aneinander ansetzbar sind und an diesem befestigbar sind,
- innere Platten, die aneinander und an einer äußeren Platte durch gemeinsame Befestigungsmittel zu befestigen sind, beispielsweise ein oder mehrere Klammern oder Schrauben, wobei die Platten derart sind, daß eine profilierte Kante einer äußeren Platte einen Vorsprung bildet, an dem profilierte Kanten von zwei aufeinanderfolgenden inneren Platten befestigt sind, und wobei die profilierte Kante der äußeren Platte eine Nut zum Einschieben einer nachfolgenden äußeren Platte bildet, die mit einer entgegengesetzt profilierten Kante versehen ist, die mit der Nut zusammenwirkt.

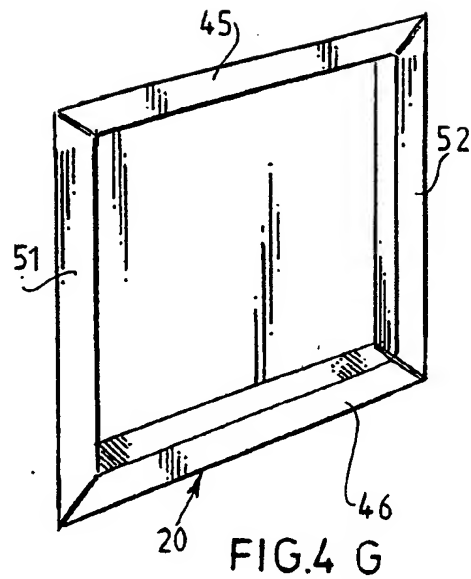
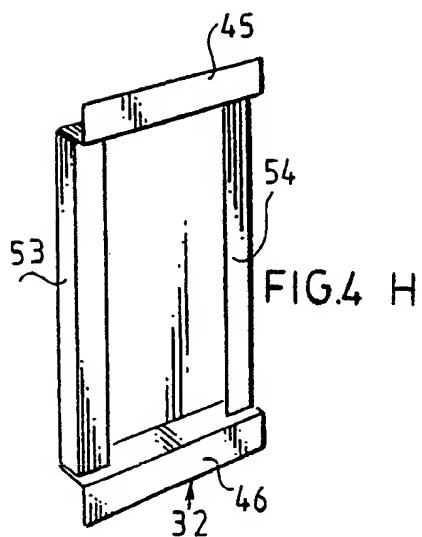
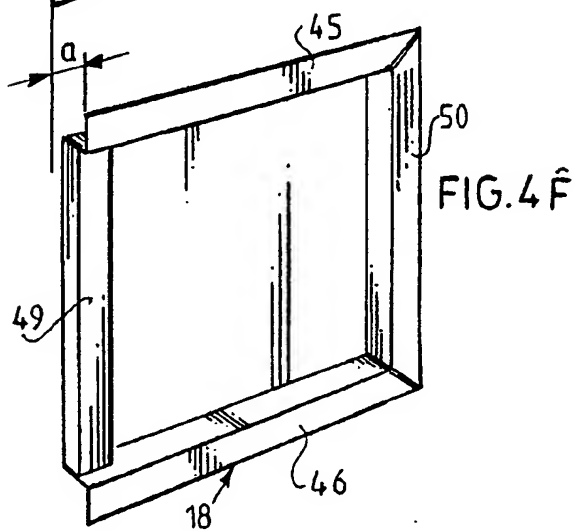
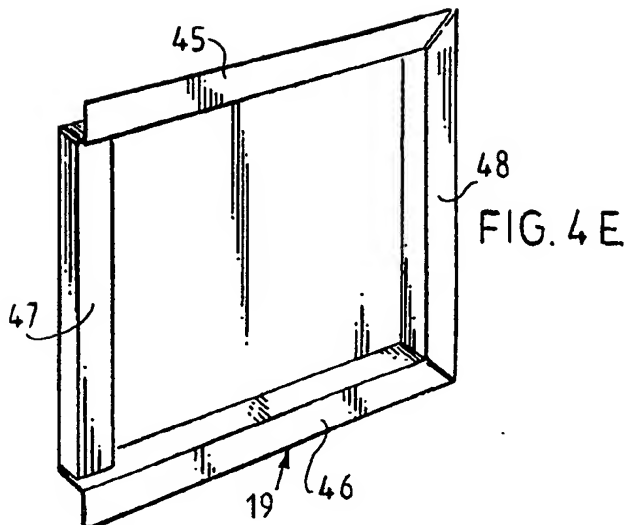
5. Herstellungssystem nach Anspruch 4, gekennzeichnet durch zwischenliegende äußere Platten (5), die an ihrer einen Seite mit im Querschnitt im wesentlichen schwanenhalsförmigen Kanten (3) und auf ihrer gegenüberliegenden Seite mit im Querschnitt im wesentlichen Z-förmigen Kanten (14) versehen sind.

6. Herstellungssystem nach Anspruch 4 oder 5, gekennzeichnet durch zumindestens eine äußere Anfangsplatte (30) und zumindestens eine äußere Endplatte (11), die mit Kanten versehen

- sind, die derart profiliert sind, daß sie von der Außenseite des Rahmens zwischen einem Rippenprofil (23,242) und einer angrenzenden äußeren Platte angeordnet werden können, wobei eine innere Platte (18,20) und die jeweilige äußere Platte (11,30) an dem Rippenprofil unter Verwendung gemeinsamer Befestigungsmittel (25) befestigbar sind.
7. Herstellungssystem nach Anspruch 5 oder 6, **gekennzeichnet** durch eine äußere Endplatte (11), die mit einem verkürzten Kantenende zur Befestigung an einem Rippenprofil (23) versehen ist.
 8. Herstellungssystem nach einem der Ansprüche 5 bis 7, **gekennzeichnet** durch eine äußere Anfangsplatte (30), die mit zwei schwanenhalsförmigen Kanten (15,21) versehen ist, von denen eine Kante (21) mit einer verkürzten Kante zur Befestigung an einem Rippenprofil (24) versehen ist.
 9. Herstellungssystem nach einem der vorhergehenden Ansprüche, **gekennzeichnet** durch eine äußere Zugangsplatte (31), die mit einer Öffnung (34) für den Zugang an Einrichtungen (35) zu ihrer Befestigung an einer angrenzenden äußeren Platte (30) versehen ist.
 10. Herstellungssystem nach einem der vorhergehenden Ansprüche, **gekennzeichnet** durch eine innere zwischenliegende Platte (19), die mit einer Z-förmigen Kante (48) und einer U-förmigen Kante (47) versehen ist.
 11. Herstellungssystem nach einem der Ansprüche 2 bis 7, **gekennzeichnet** durch eine innere Anfangsplatte (20), die mit zwei Z-förmigen Kanten (51,52) versehen ist.
 12. Herstellungssystem nach einem der Ansprüche 2 bis 8, **gekennzeichnet** durch eine innere Endplatte (18), die mit einer Z-förmigen und eine U-förmigen Kante (50 bzw. 49) versehen ist und die eine geringfügig kleinere Länge als eine innere zwischenliegende Platte aufweist.
 13. Herstellungssystem nach einem der vorhergehenden Ansprüche, **gekennzeichnet** durch zwei innere Zugangsplatten (32), die jeweils mit zwei U-förmigen Kanten (53,54) versehen sind und deren Länge angenähert der halben Länge einer inneren zwischenliegenden Platte entspricht.
 14. Herstellungssystem nach einem der Ansprüche 2 bis 9, **dadurch gekennzeichnet**, daß das oder jedes Rippenprofil (23,24,71,72,75) durch ein Eckenprofil mit zwei U-förmigen Kanten gebildet ist.
 15. Herstellungssystem nach einem der vorhergehenden Ansprüche, **gekennzeichnet** durch Klammern (25), die vorzugsweise mit einem Hakenteil (59) versehen sind und die um die Kanten der äußeren Platten, inneren Platten und Rippenprofile aufsetzbar sind.
 16. Herstellungssystem nach Anspruch 15, **dadurch gekennzeichnet**, daß die Kanten mit einer Aussparung zur Aufnahme der Klammer versehen sind.
 17. Herstellungssystem nach einem der vorhergehenden Ansprüche, **gekennzeichnet** durch Isoliermaterialstreifen (28), die zwischen den Kantenenden der inneren Platten und den Kantenenden der äußeren Platten anzuordnen sind.
 18. Herstellungssystem für ein im wesentlichen horizontales Klimaanlage-Gehäuse (1) nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet**, daß die äußeren Platten mit oberen und unteren Kanten (43 bzw. 44) mit im wesentlichen schwanenhalsförmigem Querschnitt zur Befestigung an den horizontalen Rippenprofilen (75) versehen sind.
 19. Herstellungssystem für ein im wesentlichen horizontales Klimaanlage-Gehäuse nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet**, daß die inneren Platten mit oberen und unteren Kanten (45 bzw. 46) mit im wesentlichen Z-förmigem Querschnitt zur Befestigung an horizontalen Rippenprofilen (75) versehen sind.
 20. Klimaanlage-Gehäuse, das nach einem der Verfahren nach den Ansprüchen 1 bis 3 oder mit Hilfe des Herstellungssystems nach einem der Ansprüche 4 bis 17 hergestellt ist.







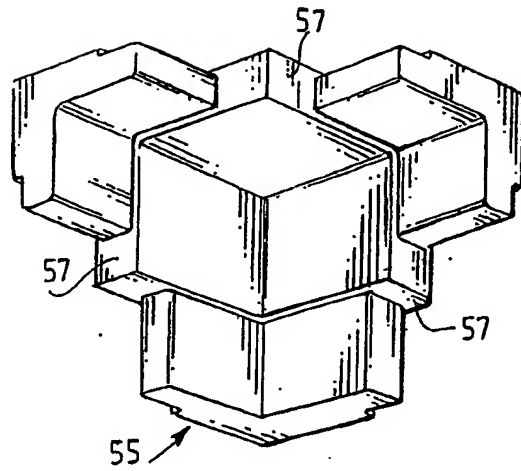


FIG. 5

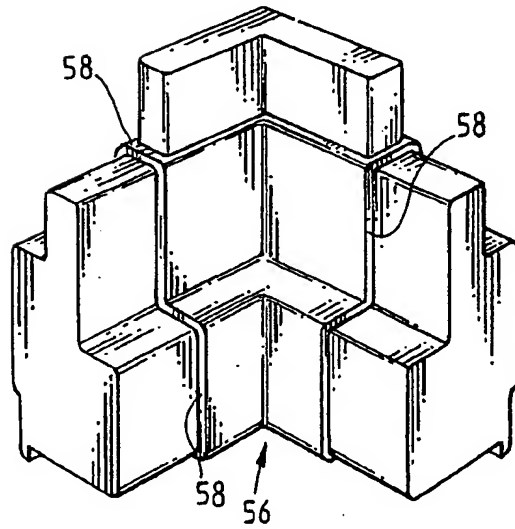


FIG. 6

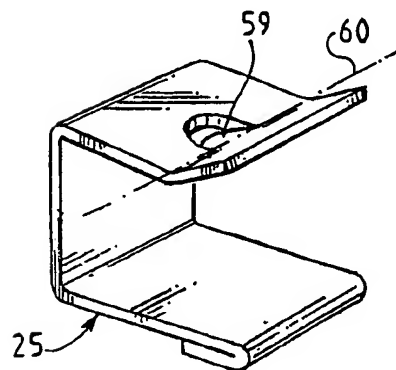
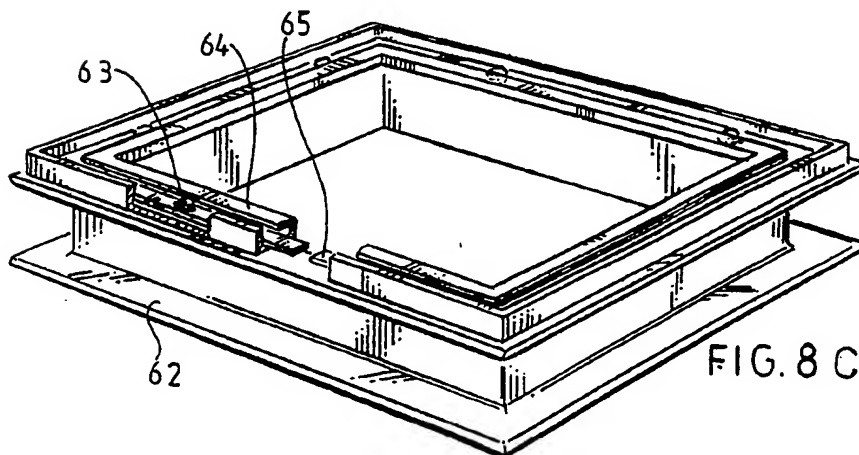
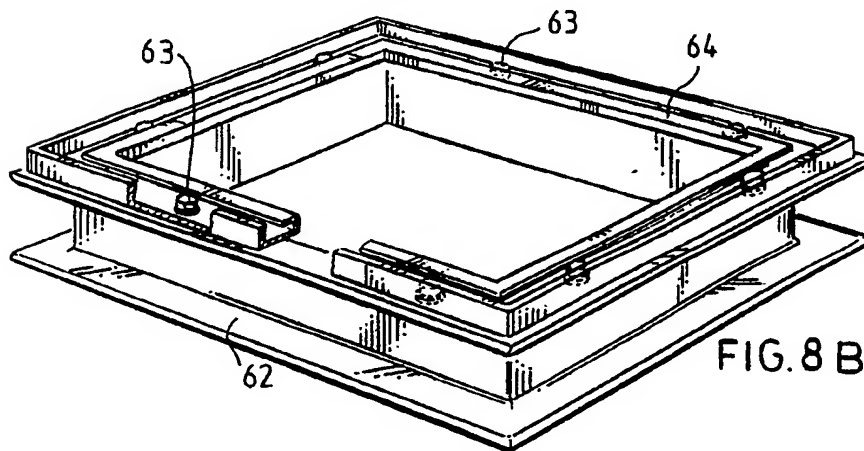
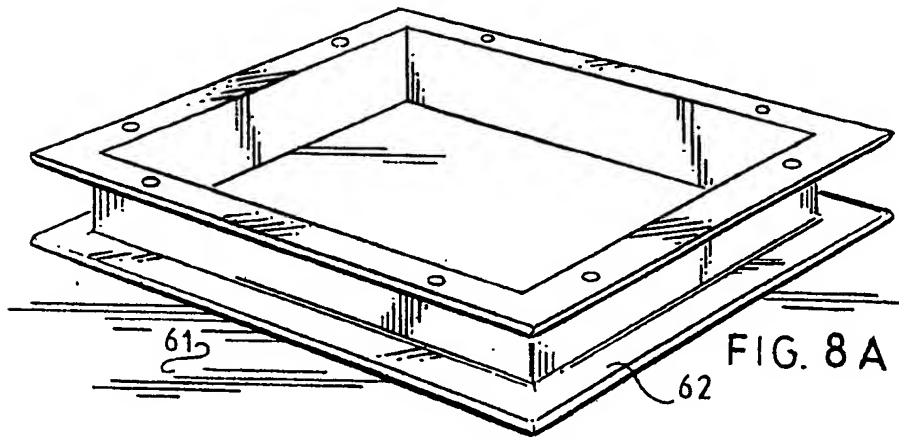
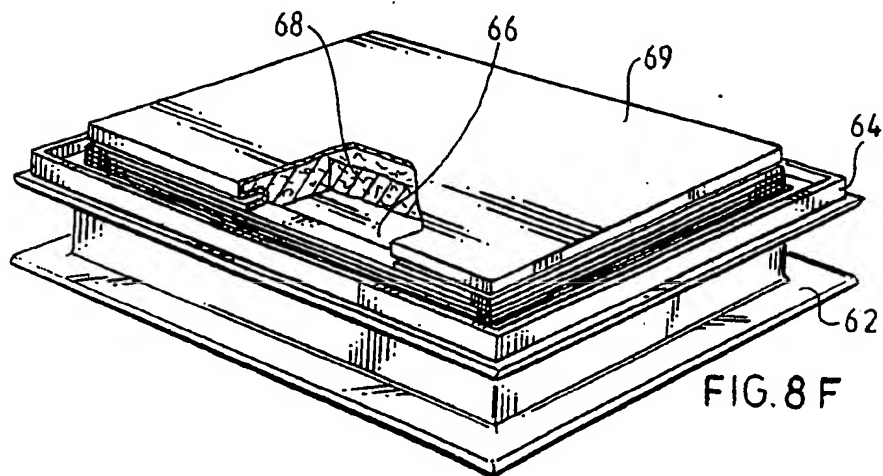
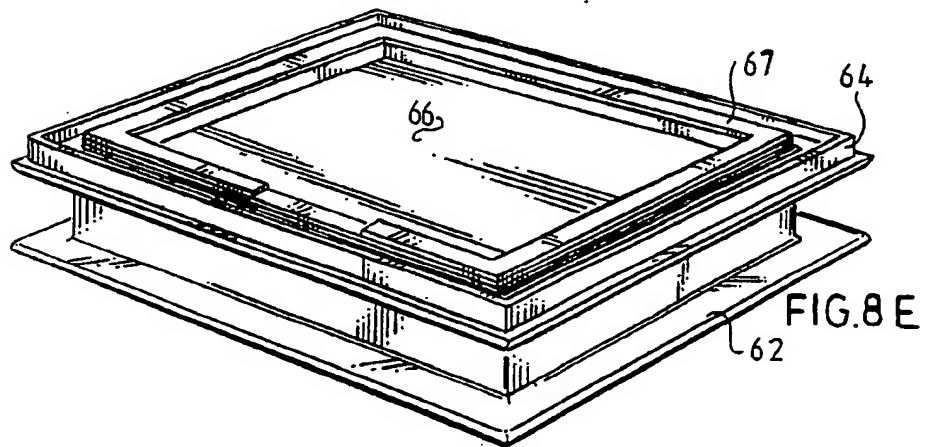
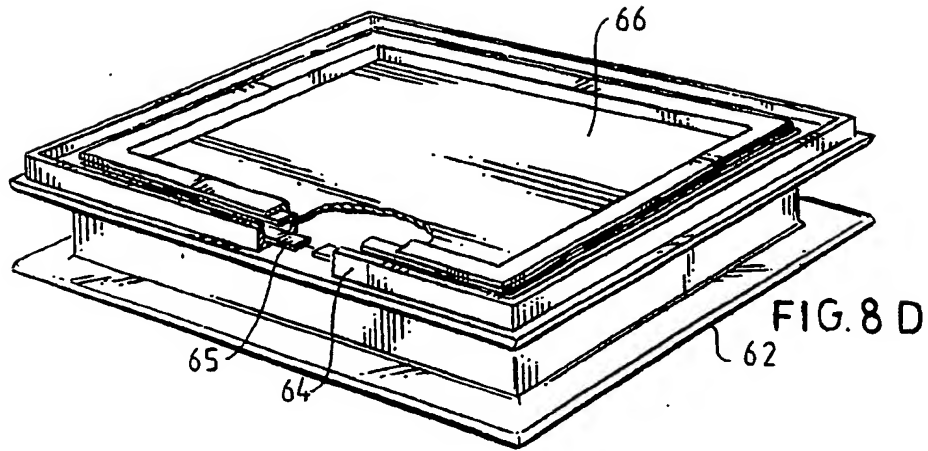


FIG. 7





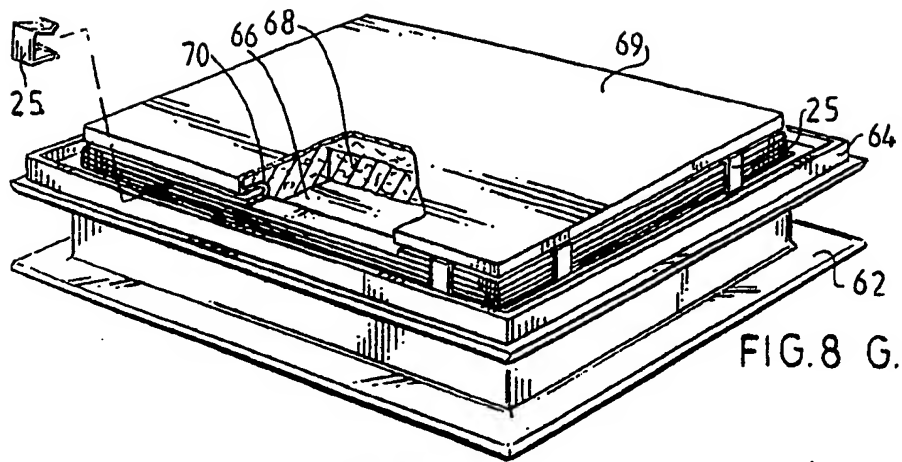


FIG. 8 G.

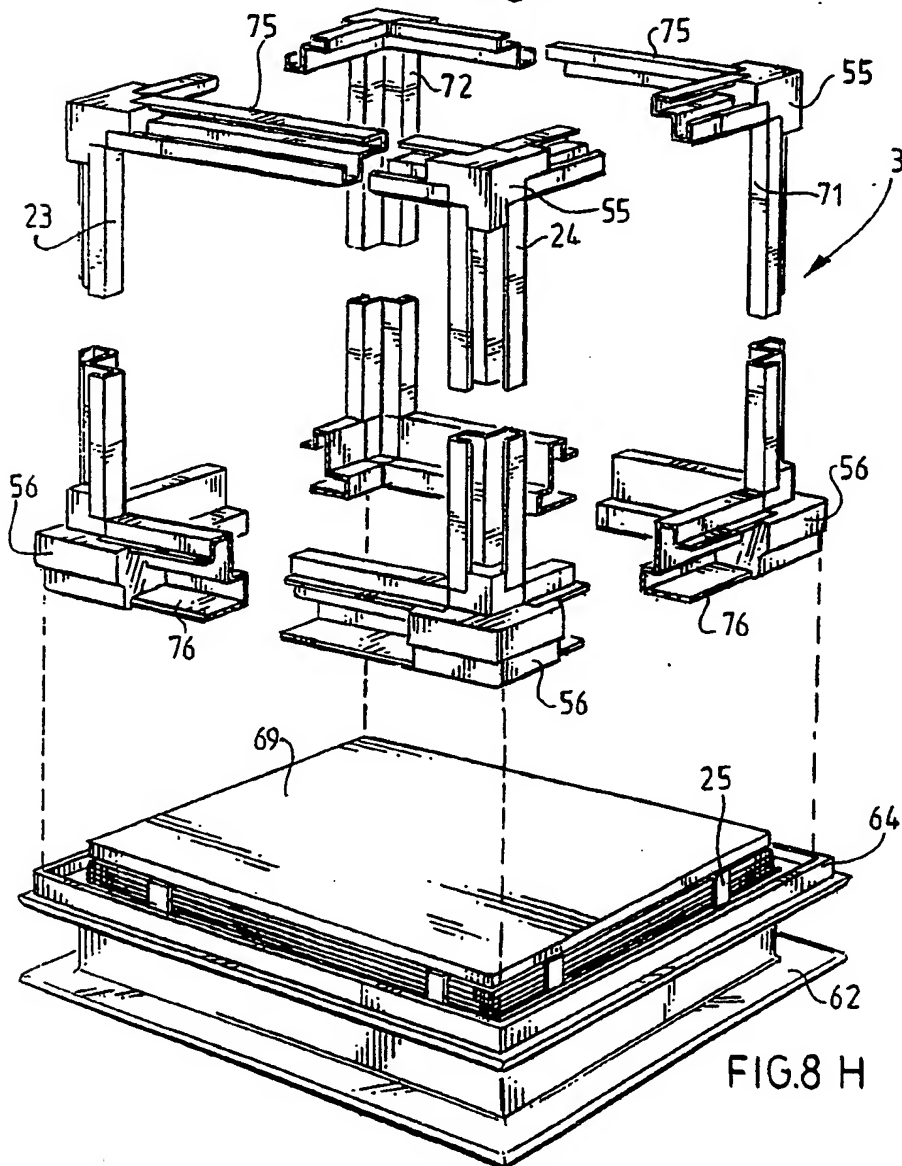
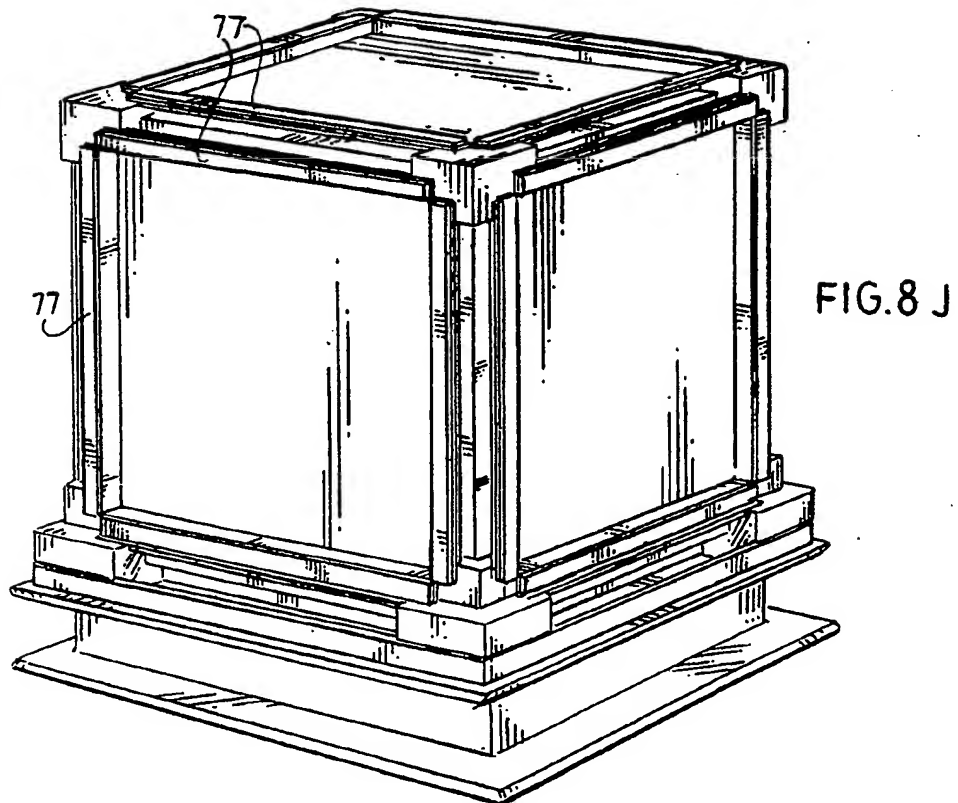
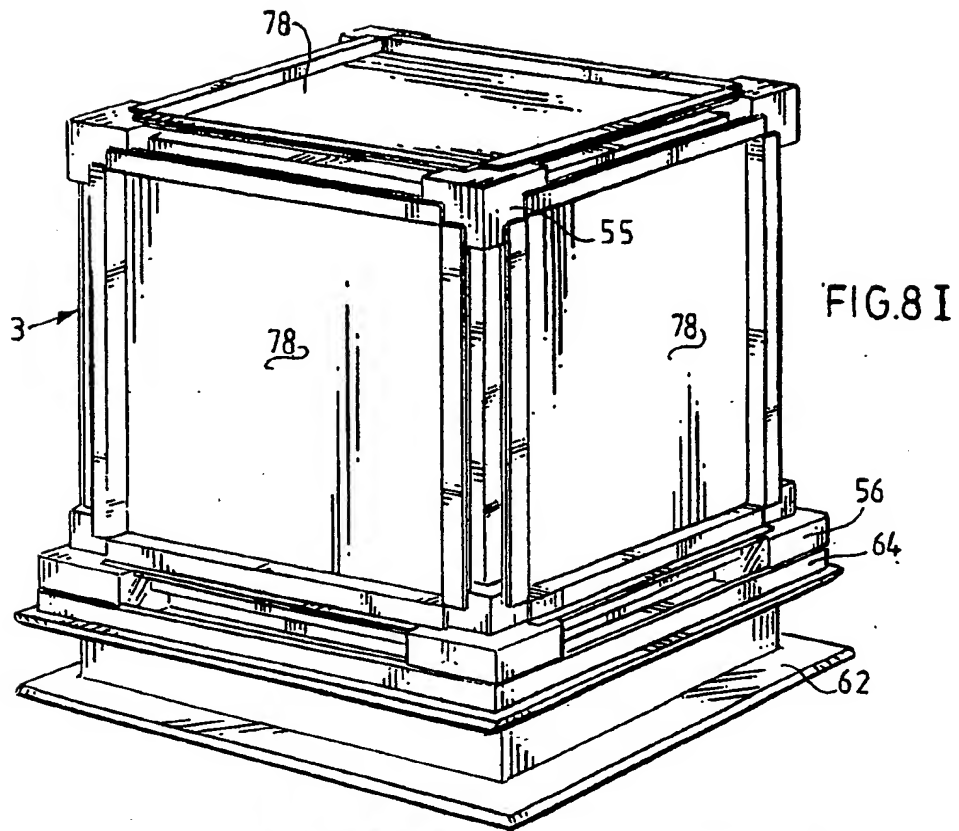
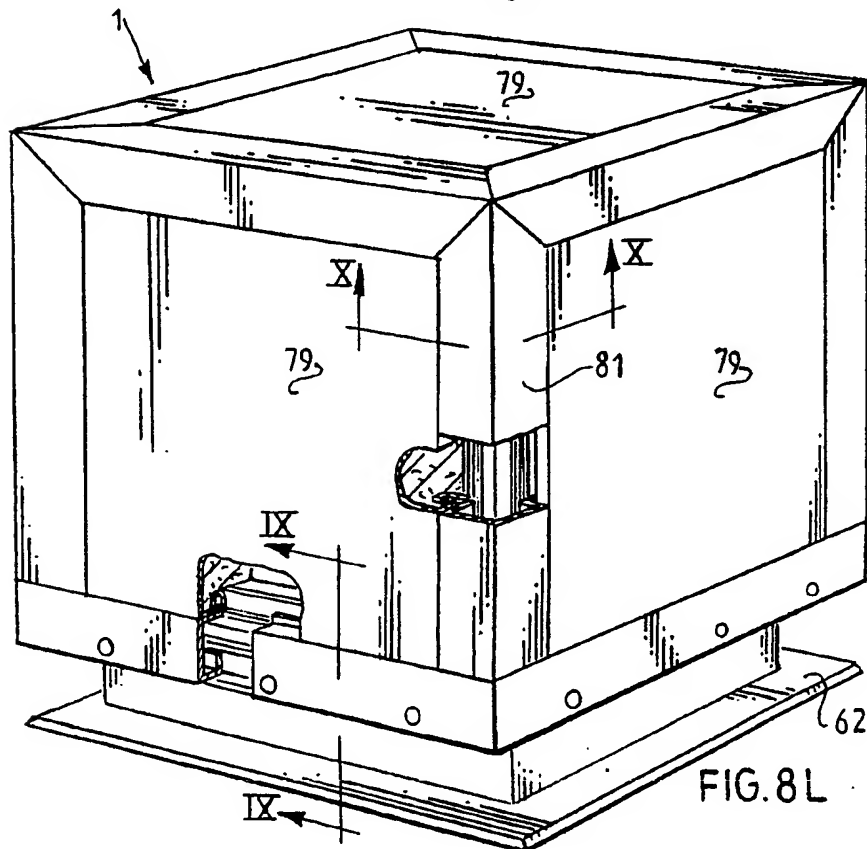
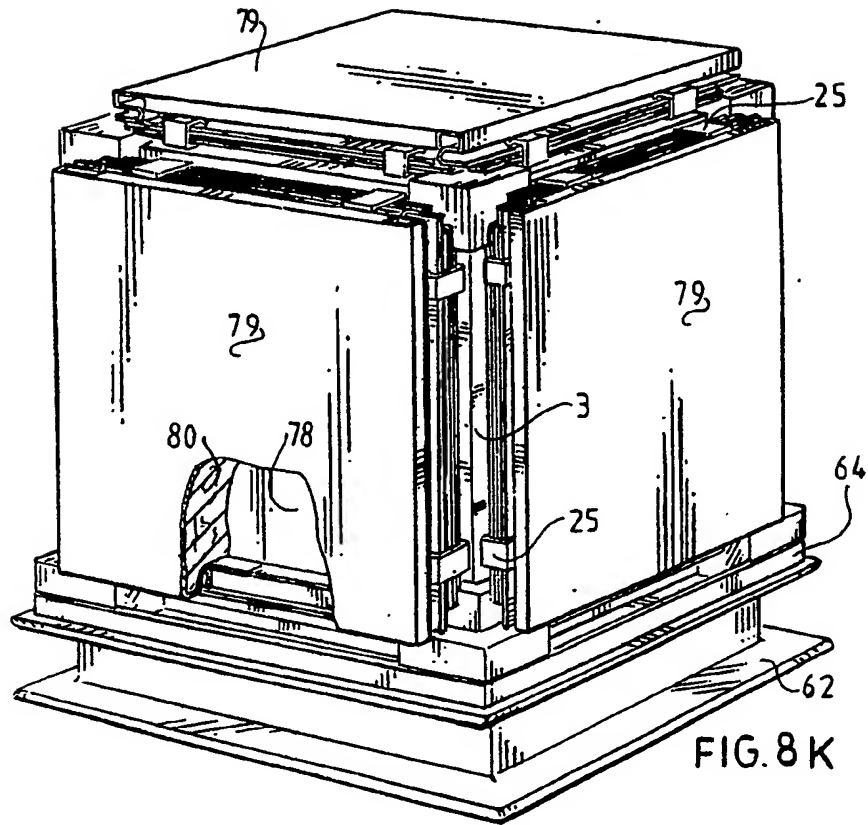


FIG. 8 H





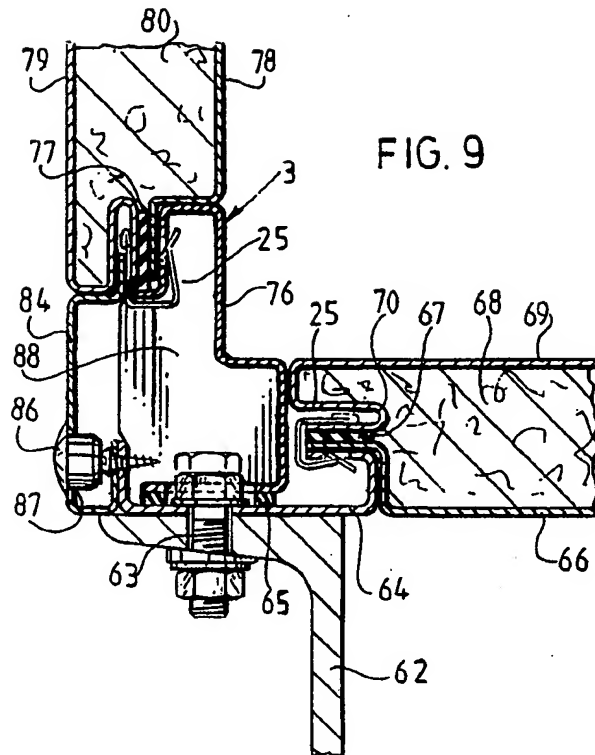


FIG. 9

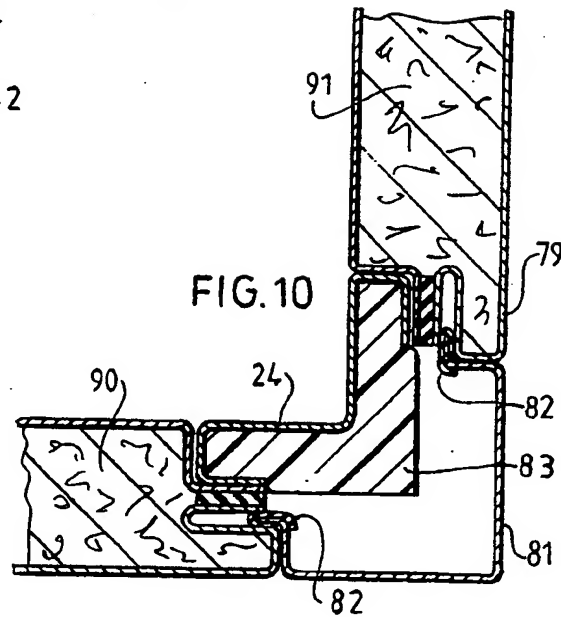


FIG. 10

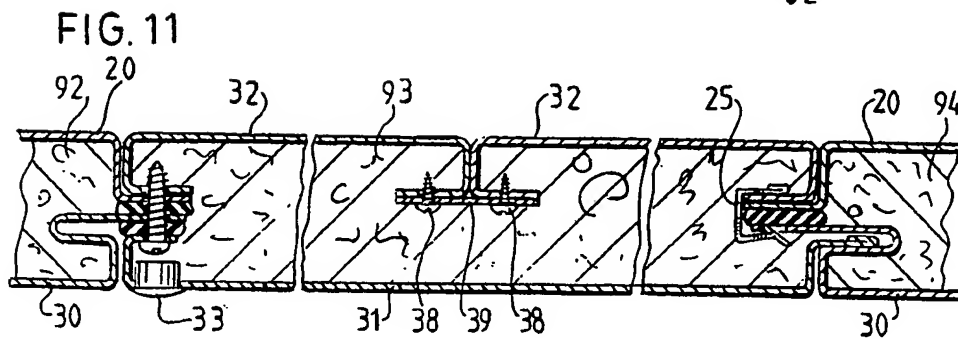


FIG. 11

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